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Avishai Keren

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EXAMINER

VAN HANDEL, MICHAEL P

ART UNIT

PAPER NUMBER

2623

NOTIFICATION DATE

DELIVERY MODE

07/17/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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DETAILED ACTION

Response to Amendment

1. This action is responsive to an Amendment filed 4/02/2008. Claims **17, 19, 20, 23** are pending. Claims **17, 20, 23** are amended. Claims **1-16, 18, 21-22, 24-47** are canceled.

Response to Arguments

1. Applicant's arguments regarding claims **17** and **20**, filed 4/02/2008, have been fully considered, but they are not persuasive.

Regarding claims **17** and **20**, the applicant argues that Richardson et al. does not disclose or teach a server that generates a set of predefined display elements of a user interface and stores the set in a table in compressed form, wherein the stored predefined display elements comprise display elements of three or more types of display elements from a group consisting of background, menu, button, icon or font display elements, wherein the server, executes a plurality of programs, each of which generates a set of display commands which represent original display elements of a user interface for each of said plurality of programs, wherein the set of predefined display elements are common display elements that are used by two or more of the plurality of programs; and an analysis module for comparing the original display elements of each of the plurality of programs with the set of predefined display elements stored at the server (underlined for emphasis). The examiner respectfully disagrees. Richardson et al. discloses a virtual network computing (VNC) system, including server machines that supply not only applications and data, but also an entire desktop environment that can be accessed from any Internet-

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connected machine using a simple software network computer (NC)(p. 33, paragraph 1). A single Unix machine can run a number of VNC servers for different users, each representing a distinct VNC desktop (p. 35, VNC Servers, paragraph 2). The examiner interprets a single Unix machine to be a “server,” as currently claimed. Each desktop is like a virtual X display, with a root window on which several X applications appear (p. 35, VNC Servers, paragraph 2). The examiner interprets each of these distinct desktops as a program that is run at the server, as currently claimed. The distinct desktops are accessed with thin-client viewers, called VNC viewers (p. 35, VNC Viewers, paragraph 1). Figures 2a and 2c illustrate Unix desktops accessed using a Windows viewer and a Java applet within Internet Explorer, respectively (Figs. 2a, 2c). The examiner notes that the Unix desktops in both Figures 2a and 2c have a background, menus, buttons, icons, and font display elements (Figs. 2a, 2c). Since Richardson et al. discloses running a number of VNC servers for different users, each representing a distinct VNC desktop, and further illustrates that the desktops have backgrounds, menus, buttons, icons, and font display elements, the examiner interprets this as a “set of predefined display elements” that “are common display elements that are used by two or more of the plurality of programs,” as currently claimed. As such, the examiner maintains that Richardson et al. meets the limitations of “a server that generates a set of predefined display elements of a user interface and stores the set in a table in compressed form, wherein the stored predefined display elements comprise display elements of three or more types of display elements from a group consisting of background, menu, button, icon or font display elements, wherein the server, executes a plurality of programs, each of which generates a set of display commands which represent original display elements of a user interface for each of said plurality of programs, wherein the set of predefined

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display elements are common display elements that are used by two or more of the plurality of programs” and “an analysis module for comparing the original display elements of each of the plurality of programs with the set of predefined display elements stored at the server,” as currently claimed.

Further regarding claims **17** and **20**, the applicant argues that Richardson et al. does not disclose predefined display elements and for storing the set in a table in compressed form. The examiner respectfully disagrees. As noted in the Office Action mailed 1/02/2008, Richardson et al. discloses that the VNC server is the endpoint where changes to the framebuffer originate. Updates represent changes from one valid framebuffer state to another (p. 35, The VNC Protocol & Adaptive Update). For example, when using copy-rectangle encoding when a user moves a window across a screen or scrolls a window’s contents (p. 35, A Single Graphics Primitive, paragraph 3), these graphics are pre-stored in the previous frame and re-used by way of x, y coordinates. The examiner interprets this previous frame to be a table storing predefined display elements of a user interface in compressed form. As such, the examiner maintains that Richardson et al. meets the limitation of predefined display elements of a user interface being stored in a table in compressed form, as currently claimed.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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2. Claims **17, 19, 20, 23** are rejected under 35 U.S.C. 102(a) as being anticipated by Richardson et al. (of record – Virtual Network Computing).

Referring to claims **17** and **20**, Richardson et al. discloses a remote computing server system/method that includes a server that provides remote client access to one or more programs that are run at the server, remotely from one or more client systems (in VNC, server machines supply applications, data, and an entire desktop environment that can be accessed from any Internet-connected machine)(p. 33), and wherein the server converts display commands generated from the one or more programs into compressed video streams (the user interface is treated as video and only the parts of the screen that are changed are sent)(p. 34 Videotile), the remote computing server system comprising:

- a server that generates a set of predefined display elements of a user interface (display elements from the pre-update frame) and stores the set in a table in compressed form (the VNC server is the endpoint where changes to the framebuffer originate. Updates represent changes from one valid framebuffer state to another)(p. 35, The VNC Protocol & Adaptive Update), wherein the stored predefined display elements comprise display elements of three or more types of display elements from a group consisting of background (a rectangle may describe a rectangle of a background color)(p. 35), menu (a rectangle may describe a window)(p. 35; p. 36; & Figs. 2a-2d), button (Fig. 2), icon (Fig. 2) or font display elements (a pixel-data caching scheme can encode multiple occurrences of the same text character by referring to the first occurrence. Large areas of text can also be copy-rectangle encoded)(p. 35 & Fig. 2), wherein the server executes a plurality of programs, each of which generates a set of

display commands responsive to an Internet connection for a client that is remote from the server computer, the set of display commands representing original display elements (new framebuffer state elements) of a user interface for the Internet connection for each of said plurality of programs (p. 33), wherein the set of predefined display elements are common display elements that are used by two or more of the plurality of programs (a single Unix machine can run a number of VNC servers for different users, each representing a distinct VNC desktop. As shown in Figure 2, Unix desktops have backgrounds, menus, buttons, icons, and font display elements. As such, the examiner notes that the independent Unix desktops accessed by different users share common display elements)(p. 35, VNC Servers);

- an analysis module for comparing the original display elements of each of the plurality of programs with the set of predefined display elements stored at the server, wherein responsive to transmission bandwidth limitations that are identified by the server (various encoding schemes allow a large degree of flexibility in trading off parameters, such as network bandwidth, client drawing speed, and server processing speed. The server can choose the encoding for each rectangle based on the particular screen content being transmitted and the available network bandwidth. A client that cannot easily read from its framebuffer can specify that it should not be sent data encoded in this way)(p. 35, A Single Graphics Primitive & Adaptive Update), the analysis module selects corresponding modified display elements from the set of predefined display elements that are most similar to one or more of the original display elements (a moved window will use window pixel data from the framebuffer

prior to the move. A scrolled window will use pixel data from the framebuffer prior to the scroll), the set of predefined elements compiled to simplify compression in accordance with said transmission bandwidth limitations (p. 35, Adaptive Update), wherein the display elements comprise graphical primitives (if the current framebuffer state has the same background, window, and/or text as the previous framebuffer state, the server uses copy-rectangle encoding or a pixel-data caching scheme to save bandwidth by reusing the same pixel data)(p. 35, The VNC Protocol; A Single Graphics Primitive; & Adaptive Update), wherein selecting the corresponding modified display elements includes:

- referring to a plurality of modifiable parameters that trade image quality and bandwidth with each of these modifiable parameters having a range in which image quality is minimally degraded and a range in which image quality is significantly degraded and selecting the modified display elements based on the plurality of modifiable parameters so that image quality is minimally degraded based on the transmission bandwidth limitations (various encoding schemes can be used to allow a large degree of flexibility in trading off parameters, such as network bandwidth, client drawing speed, and server processing speed. The server can choose the encoding scheme most appropriate for the screen content being transmitted and the available network bandwidth)(p. 35);

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- a video compressor which receives the degraded modified display elements selected above and generates there from a compressed video stream for each one of said plurality of programs (p. 35, Adaptive Update); and
- a transmitter that transmits the plurality of compressed video streams to one or more remote locations (p. 35, Adaptive Update).

Referring to claims **19** and **23**, Richardson et al. discloses a server/method according to claims 17, 20, and 45, respectively, wherein the set of predefined display elements stored differ from the original display elements by one or more of color, spatial frequency spectrum, size (the size dimensions of the background will change based on the movement of text and windows)(p. 35, A Single Graphics Primitive), contrast, or type.

NOTE: The USPTO considers the applicant's "one or more" language to be anticipated by any reference containing any of the subsequent corresponding elements.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL VAN HANDEL whose telephone number is (571)272-5968. The examiner can normally be reached on 8:00am-5:30pm Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on 571-272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chris Kelley/
Supervisory Patent Examiner, Art Unit
2623

MVH